WHAT IS CLAIMED:

1. A method of visually representing user behavior within an interactive voice response (IVR) system of a call processing center, in which the IVR system generates user prompts, including a first prompt generated upon entry of a user into the IVR system, and subsequent prompts triggered by data inputted by a user or by internal processing of the IVR system that cause a branching in a call flow within the IVR system, said method comprising the steps of:

generating a complete sequence of events within the IVR system for plural calls to the call processing center, the plural calls being recorded from end to end;

modeling a call flow of the IVR system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the IVR system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the call flow of the IVR system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between call flow states triggered by data inputted by a user or by internal processing of the IVR system;

providing the complete sequences of events for the plural calls to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the IVR system, separating different levels of automation achieved; and

representing data from the two-way matrix as a state-transition diagram.

2. A method according to Claim 1, wherein each node of the state-transition diagram represents one of a specific prompt in the call flow of the IVR system, a prompt with re-prompts and retries, and a complete subsection of the IVR system, which represents many different prompts.

3. A method according to Claim 1, wherein exit conditions in the state-transition diagram are represented by leaves, each of the leaves indicating one of a call resolved in the IVR system, a call transferred to a live agent, and a caller hanging up without obtaining useful information.

4. An apparatus for visually representing user behavior within an interactive voice response (IVR) system of a call processing center, in which the IVR system generates user prompts, including a first prompt generated upon entry of a user into the IVR system, and subsequent prompts triggered by data inputted by a user or by internal processing of the IVR system that cause a branching in a call flow within the IVR system, said apparatus comprising:

means for generating a complete sequence of events within the IVR system for plural calls to the call processing center, the plural calls being recorded from end to end;

means for modeling a call flow of the IVR system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the IVR system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the call flow of the IVR system, exit conditions are represented as end states, and transitions of the finite-

state machine represent transitions between call flow states triggered by data inputted by a user or by internal processing of the IVR system;

means for providing the complete sequences of events for the plural calls to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the IVR system, separating different levels of automation achieved; and

means for representing data from the two-way matrix as a state-transition diagram.

5. An apparatus according to Claim 4, wherein each node of the state-transition diagram represents one of a specific prompt in the call flow of the IVR system, a prompt with re-prompts and retries, and a complete subsection of the IVR system, which represents many different prompts.

6. An apparatus according to Claim 4, wherein exit conditions in the state-transition diagram are represented by leaves, each of the leaves indicating one of a call resolved in the IVR system, a call transferred to a live agent, and a caller hanging up without obtaining useful information.

7. A system for visually representing user behavior within an interactive voice response (IVR) system of a call processing center, in which the IVR system generates user prompts, including a first prompt generated upon entry of a user into the IVR system, and subsequent prompts triggered by data inputted by a user or by internal

processing of the IVR system that cause a branching in a call flow within the IVR system, said system being operable to:

generate a complete sequence of events within the IVR system for plural calls to the call processing center, the plural calls being recorded from end to end;

model a call flow of the IVR system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the IVR system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the call flow of the IVR system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between call flow states triggered by data inputted by a user or by internal processing of the IVR system;

provide the complete sequences of events for the plural calls to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the IVR system, separating different levels of automation achieved; and

represent data from the two-way matrix as a state-transition diagram.

8. A system according to Claim 7, wherein each node of the state-transition diagram represents one of a specific prompt in the call flow of the IVR system, a prompt with re-prompts and retries, and a complete subsection of the IVR system, which represents many different prompts.

9. A system according to Claim 7, wherein exit conditions in the state-transition diagram are represented by leaves, each of the leaves indicating one of a call resolved in the IVR system, a call transferred to a live agent, and a caller hanging up without obtaining useful information.

10. A computer program product embodying a program for implementing a method of visually representing user behavior within an interactive voice response (IVR) system of a call processing center, in which the IVR system generates user prompts, including a first prompt generated upon entry of a user into the IVR system, and subsequent prompts triggered by data inputted by a user or by internal processing of the IVR system that cause a branching in a call flow within the IVR system, said computer program product comprising:

code for generating a complete sequence of events within the IVR system for plural calls to the call processing center, the plural calls being recorded from end to end;

code for modeling a call flow of the IVR system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the IVR system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the call flow of the IVR system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between call flow states triggered by data inputted by a user or by internal processing of the IVR system;

code for providing the complete sequences of events for the plural calls to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the IVR system, separating different levels of automation achieved; and

code for representing data from the two-way matrix as a state-transition diagram.

11. A computer program product according to Claim 10, wherein each node of the state-transition diagram represents one of a specific prompt in the call flow of the IVR system, a prompt with re-prompts and retries, and a complete subsection of the IVR system, which represents many different prompts.

12. A computer program product according to Claim 10, wherein exit conditions in the state-transition diagram are represented by leaves, each of the leaves indicating one of a call resolved in the IVR system, a call transferred to a live agent, and a caller hanging up without obtaining useful information.

13. A method of visually representing user behavior within an automated response system of a contact processing center, in which the automated response system generates user prompts, including a first prompt generated upon entry of a user into the automated response system, and subsequent prompts triggered by data inputted by a user or by internal processing of the automated response system that cause a branching in a contact flow within the automated response system, said method comprising the steps of:

generating a complete sequence of events within the automated response system for plural contacts to the contacts processing center, the plural contacts being recorded from end to end;

modeling a contact flow of the automated response system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the automated response system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the contact flow of the automated response system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between contact flow states triggered by data inputted by a user or by internal processing of the automated response system;

providing the complete sequences of events for the plural contacts to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the automated response system, separating different levels of automation achieved; and

representing data from the two-way matrix as a state-transition diagram.

14. An apparatus for visually representing user behavior within an automated response system of a contact processing center, in which the automated response system generates user prompts, including a first prompt generated upon entry of a user into the automated response system, and

subsequent prompts triggered by data inputted by a user or by internal processing of the automated response system that cause a branching in a contact flow within the automated response system, said apparatus comprising:

means for generating a complete sequence of events within the automated response system for plural contacts to the contact processing center, the plural contacts being recorded from end to end;

means for modeling a contact flow of the automated response system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the automated response system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the contact flow of the automated response system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between contact flow states triggered by data inputted by a user or by internal processing of the automated response system;

means for providing the complete sequences of events for the plural contacts to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the automated response system, separating different levels of automation achieved; and

means for representing data from the two-way matrix as a state-transition diagram.

15. A system for visually representing user behavior within an automated response system of a contact processing center, in which the automated response system generates user prompts, including a first prompt generated upon entry of a user into the automated response system, and subsequent prompts triggered by data inputted by a user or by internal processing of the automated response system that cause a branching in a contact flow within the automated response system, said system being operable to:

generate a complete sequence of events within the automated response system for plural contacts to the contact processing center, the plural contacts being recorded from end to end;

model a contact flow of the automated response system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the automated response system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the contact flow of the automated response system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between contact flow states triggered by data inputted by a user or by internal processing of the automated response system;

provide the complete sequences of events for the plural contacts to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the automated response

system, separating different levels of automation achieved; and

represent data from the two-way matrix as a state-transition diagram.

16. A computer program product embodying a program for implementing a method of visually representing user behavior within an automated response system of a contact processing center, in which the automated response system generates user prompts, including a first prompt generated upon entry of a user into the automated response system, and subsequent prompts triggered by data inputted by a user or by internal processing of the automated response system that cause a branching in a contact flow within the automated response system, said program product comprising:

code for generating a complete sequence of events within the automated response system for plural contacts to the contact processing center, the plural contacts being recorded from end to end;

code for modeling a contact flow of the automated response system as a non-deterministic finite-state machine, such that a start state of the finite-state machine represents a first prompt of the automated response system, other states of the finite-state machine represent subsequent prompts at which a branching occurs in the contact flow of the automated response system, exit conditions are represented as end states, and transitions of the finite-state machine represent transitions between contact flow states triggered by data inputted by a user or by internal processing of the automated response system;

code for providing the complete sequences of events for the plural contacts to the finite-state machine to produce a two-way matrix of several counters, such that:

for states with at least one child or subsequent state, there are provided state-transition counters, and

for exit states, there are provided counters representing exit conditions from the automated response system, separating different levels of automation achieved; and

code for representing data from the two-way matrix as a state-transition diagram.